

SCIENCE & EDUCATION Impact

Benefits from USDA/Land-Grant Partnership

Urban Interfaces

Urban/rural interactions improved by Land-Grant assistance.

As human populations increase and people move to more desirable rural areas, conflicts between urban and rural sectors can arise. These conflicts can result from demands caused by urban sprawl, diminishing natural resources and threats to environmental quality. The USDA and Land-Grant universities are finding ways to solve these conflicts and working together to preserve natural resources such as water, land and green space.

Payoff

- **Sharing natural resources.** Nevada is the nation's fastest-growing state and also one of its driest areas. Currently drinking water is used to irrigate landscapes. If the trend continues, Las Vegas could run out of water by 2010. **Nevada** researchers are finding sources of "new water" from recycled or poor quality water sources that can be used on landscapes, which eventually could save 40 percent of fresh water during the summer. Similar programs are under way in **Arizona** to benefit citrus producers.
- **Taking responsibility.** Non point-source pollution from urban and rural sources is the primary cause of water quality problems in the United States. Many states are combining urban and agricultural efforts to protect water supplies. A cooperative multistate effort to protect the Chesapeake Bay led **Maryland** researchers to promote the use of riparian forest buffers — areas of trees, shrubs and vegetation adjacent to bodies of waters that capture pollutants before they reach the bay. Their educational video has increased riparian awareness throughout the Chesapeake Bay area and was distributed in all 50 states and several foreign countries, including Germany and Albania.
- **Getting the bugs out.** Land-Grant universities are helping combat insect pests in urban environments. For example, in Texas, fire ant control in Dallas/Fort Worth, Austin, Houston and San Antonio costs some \$580 million annually. In San Antonio, **Texas A&M** Extension specialists developed treatments that reduced pesticide applications by 75 percent and treatment costs by 80 percent. **Georgia** personnel used new management strategies and Integrated Pest Management (IPM) ideas to

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reduce pesticide use and save at least \$10 million each year in treatment costs for Argentine ants. **Florida** researchers helped the state become the first to voluntarily coordinate IPM practices in public schools, where pests must be controlled without harming students with chemicals. In one Florida school district, this approach saved an estimated \$1.5 million in liability and legal fees after its pest control program came under fire.

- **Lambs, lions and burning bushes.** In dry climates such as Nevada's, a key to controlling wildfires is to keep vegetation near neighborhoods in check. **Nevada** researchers used sheep for this purpose in one high-risk area. The sheep's grazing created a fuel break along the urban-wildland interface of Carson City, Nevada, an area known for its propensity to burn. Nearly 90 percent of nearby homeowners supported the project and preferred the sheep to other methods of creating fuel breaks. Some 87 percent of Nevada is designated as public land. As the state's population grows, conflicts arise with the large wildlife populations on these lands, particularly bears, mountain lions and coyotes. Nevada researchers are studying large carnivores in areas where contact with humans is likely and developing strategies to minimize such encounters. Results are being reviewed by several western states that also deal with large carnivores.

- **Green spaces, better lives.** **Illinois** researchers have shown that more child abuse, crime and other social problems occur when people don't have access to trees and nature. Chicago city officials took this information to heart and spent \$10 million to plant 20,000 trees. This has led other states to embrace urban forestry efforts. **Alabama** Extension helped provide more than \$250,000 in grants for urban forestry projects. In New York, **Cornell** Extension helped one county plant some 300 trees at an estimated overall cost of \$15,000, saving the county \$45,000 in normal installation costs.

- **Long live the trees.** Installing trees in urban areas can be expensive, especially if the trees don't survive in their new homes. Financial losses caused by tree death amount to hundreds of dollars per tree. **Maryland** scientists developed management and planting practices for urban trees to ensure fast growth and survival. **Wisconsin** scientists have patented and released

numerous disease-resistant elm varieties. Today, the program is one of only two in the United States that develops and evaluates disease-resistant elms. In 2000 alone, about 70,000 elms from the program were sold in the United States and Europe.

- **Making the most of compost.** **Georgia** research and extension efforts are diverting tons of organic waste from municipalities, agriculture and manufacturing into a composting process that saves \$1.4 million per year. The project also generates jobs and \$2 million revenue from the sale of the end product. At **Penn State**, a campuswide composting project is transforming food wastes, animal manure and landscape debris into compost for use in campus landscaping projects, athletic field maintenance and agricultural research. During 1999 - 2000, the facility took in a total of 726 tons of waste. This saved the university \$300 to \$400 per week in waste removal fees, significantly reduced odor problems and created a usable product from waste materials. In addition, the project is being used as an effective teaching tool for classes.



**Cooperative State Research, Education,
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